

WHAT IS CLAIMED IS:

1. A gas-jet driven rotary device comprising:

a rotor having a hub shaft and means adapted to support said rotor for rotation about the axis of said hub shaft;

said rotor comprising structure defining a fluid passageway extending from an inlet opening in one end of said hub shaft to a first bend intermediate the ends of the shaft, then through said first bend and substantially radially outwardly from the shaft to a second bend with an exit opening leading to an orbital path around the axis of said shaft, then through said second bend and part way around said orbital path to a third bend, then through said third bend and radially inwardly toward said shaft to a fourth bend, then through said fourth bend and along a longitudinal pathway within said shaft and out that end of the shaft opposite the end with said inlet opening to a fifth bend, then through the fifth bend and substantially radially outwardly from an axial extension of said shaft to a sixth bend, then through said sixth bend to an outlet opening facing a direction substantially tangential to an orbit thereof around said axial extension;

said structure having a metallic band snugly encircling that part thereof defining said orbital path to add mass to said rotor;

said rotor being adapted to spin around the axis of its hub shaft when a pressurized gas is introduced into said fluid passageway through said inlet opening and exhausts therefrom through said outlet opening as a jet, the direction of spin being opposite to the direction of gas flow in the jet in reaction to the thrust of said jet.

2. The gas-jet driven rotary device in accordance with Claim 1 including a housing for enclosing a major portion of said rotor having a pair of walls in which opposite ends of said hub shaft are rotatably supported.

3. The gas-jet driven rotary device in accordance with Claim 2 in which said housing is adapted to be hermetically sealed against gas leakage.

4. The gas-jet driven rotary device in accordance with Claim 3 in which said housing has a cylindrical wall interposed between and separating said pair of walls.

5. The gas-jet driven rotary device in accordance with Claim 4 in which said outlet opening faces in a rotational direction about the axis of spin of said rotor opposite to the rotational direction in which the opening from said second bend into said orbital path face.

6. The gas-jet driven rotary device in accordance with Claim 5 in which that part of said structure defining said fluid passageway that forms said orbital path around the axis of said hub shaft comprises tubular means.

7. The gas-jet driven rotary device in accordance with Claim 6 in which said tubular means comprises a rigid outer tube and a flexible inner tube, the latter being of smaller diameter than, and supported in generally concentrically spaced disposition within, the former, the flexible inner tube forming the orbital path portion of said fluid passageway.

8. The gas-jet driven rotary device in accordance with Claim 7 in which said tubular means is partially supported in position by means of a plurality of spoke elements interconnecting it with said hub shaft.

9. The gas-jet driven rotary device in accordance with Claim 8 in which at least one of said spoke elements has a hollow interior and comprises that part of the fluid passageway structure between said first bend and said second bend.

10. The gas-jet driven rotary device according to Claim 1, further comprising base stand for supporting said gas-jet driven rotary device above a floor.

11. The gas-jet driven rotary device according to Claim 10, further comprising a pair of sidewall panels forming a partial enclosure around two contiguous sides of four vertical sides defined by said gas-jet driven rotary device and said base supporting stand.

12. The gas-jet driven rotary device according to Claim 1, wherein said hub shaft is rotatably supported within said pair of walls by ball bearing assemblies.

13. The gas-jet driven rotary device according to Claim 3, wherein said ball bearing assemblies are purposely fitted to induce a wobble into said rotor when said rotor spins about the axis of said hub shaft.

14. The gas-jet driven rotary device according to Claim 11, wherein when said rotor is driven by the gas-jet, the exhausted jet ricochets off from said pair of sidewall panels during each revolution of the rotor.

15. The gas-jet driven rotary device according to Claim 14, wherein the ricochet induces a wobble into said rotor when said rotor spins about the axis of said hub shaft.

16. A gas-jet driven rotary device for generating a field and process for exposing at least one of mechanical, electrical, and chemical system, device, or component to the field generated by said gas-jet driven rotary device:

the device comprising:

a rotor having a hub shaft and means adapted to support said rotor for rotation about the axis of said hub shaft;

said rotor comprising structure defining a fluid passageway extending from an inlet opening in one end of said hub shaft to a first bend intermediate the ends of the shaft, then through said first bend and substantially radially outwardly from the shaft to a second bend with an exit opening leading to an orbital path around the axis of said shaft, then through said second bend and part way around said orbital path to a third bend, then through said third bend and radially inwardly toward said shaft to a fourth bend, then through said fourth bend and along a longitudinal pathway within said shaft and out that end of the shaft opposite the end with said inlet opening to a fifth bend, then through the fifth bend and substantially radially outwardly from an axial extension of said shaft to a sixth bend, then through said sixth bend to an outlet opening facing a direction substantially tangential to an orbit thereof around said axial extension;

said structure having a metallic band snugly encircling that part thereof defining said orbital path to add mass to said rotor;

said rotor being adapted to spin around the axis of its hub shaft when a pressurized gas is introduced into said fluid passageway through said inlet opening and exhausts therefrom through said outlet opening as a jet, the direction of spin being opposite to the direction of gas flow in the jet in reaction to the thrust of said jet; and

a housing for the major portion of said rotor having a pair of walls in which opposite ends of said hub shaft are rotatably supported, said housing having a cylindrical wall interposed between and separating said pair of walls, said housing adapted to be hermetically sealed against gas leakage;

the process including:

positioning the at least one of mechanical, electrical, and chemical system, device, or component within close proximity to said the gas-jet rotary device when said device is being operated; and

exposing the at least one of mechanical, electrical, and chemical system or component to the field generated by the device.

17. The process according to Claim 16, wherein said outlet opening faces in a rotational direction about the axis of spin of said rotor opposite to the rotational direction in which the opening from said second bend into said orbital path face.

18. The process according to Claim 17, that part of said structure defining said fluid passageway that forms said orbital path around the axis of said hub shaft comprises tubular means.

19. The process according to Claim 18 in which said tubular means comprises a rigid outer tube and a flexible inner tube, the latter being of smaller diameter than, and supported in generally concentrically spaced disposition within, the former, the flexible inner tube forming the orbital path portion of said fluid passageway.

20. The process according to Claim 19 in which said tubular means is partially supported in position by means of a plurality of spoke elements interconnecting it with said hub shaft, wherein at least one of said spoke elements has a hollow interior and comprises that part of the fluid passageway structure between said first bend and said second bend.

21. The process according to Claim 16, wherein the rotary device further comprises a base stand for supporting said gas-jet driven rotary device above a floor.

22. The process according to Claim 21, wherein the gas-jet driven rotary device and the base stand further comprising a pair of sidewall panels forming a partial enclosure around two contiguous sides of four vertical sides defined by said gas-jet driven rotary device and said base supporting stand.

23. The process according to Claim 16, wherein said hub shaft is rotatably supported within said pair of walls by ball bearing assemblies.

24. The process according to Claim 23, wherein said ball bearing assemblies are purposely fitted to induce a wobble into said rotor when said rotor spins about the axis of said hub shaft.

25. The process according to Claim 22, wherein when said rotor is driven by the gas-jet, the exhausted jet ricochets off from said pair of sidewall panels during each revolution of the rotor.

26. The process according to Claim 25, wherein the ricochet induces a wobble into said rotor when said rotor spins about the axis of said hub shaft.

27. A gas-jet driven device comprising a rotor adapted to rotate about a center axis comprising:

a vertically oriented hub adapted to be rotatably supported between a pair of bearing recesses positioned about the center axis;

a jacketed wheel having a circular cross-section, said wheel concentrically positioned around said hub and attached to said hub via a first radial section of said wheel inwardly bent towards and connected at a midsection of said hub, said hub supported to said hub via a plurality of spokes;

a jacketed arm comprising a first elbow section connected to a bottom of said arm, a second radial section positioned directly beneath and parallel to said first radial section, and a second elbow oriented such that an outlet of said jacketed arm is positioned along an outer perimeter defined by said jacketed wheel; and

a gas conduit comprising an inlet through an upper stem of said hub, a first section comprising a vertical oriented passage internally formed through an upper portion of said hub oriented about the center axis, a second section routed through one of said plurality of spokes, a third section comprising a flexible tube concentrically centered within said jacketed wheel, a fourth section routed downwardly through an annular cavity routed through a lower portion of said hub, and a fifth section routed concentrically through said jacketed arm and having an exhaust outlet terminating at said outlet of said second elbow;

wherein pressurized gas is introduced into said inlet of said gas conduit and exhausted out of said exhaust outlet to drive said rotor about the center axis.

28. A gas-jet driven device comprising:

a rotor comprising,

a hub adapted to rotate about a center axis;

a jacketed wheel concentrically surrounding said hub and connected to said hub by a jacketed radial section, and having a radially inclined arm attached to a bottom end of said hub, said wheel supported by a plurality of tubular radial spokes; and

a gas conduit having an inlet and exhaust outlet, said conduit defined by a first section routed through a first upper vertical section of said hub, a second section routed through

one of said plurality of spokes, a third section routed through a lower internal annular section of said hub, and a fourth section routed through said radial arm and terminating at said exhaust outlet;

wherein said rotor is driven about the center axis by flowing pressurized gas through said inlet such that a jet is formed at said exhaust outlet.

29. The gas-jet driven device according to Claim 28, further comprising a housing adapted to support said hub in a vertical orientation about the center axis and to substantially enclose and support said hub and said jacketed wheel in a horizontally orientation.

30. The gas-jet driven device according to Claim 29, said housing comprising an upper wall, lower wall, and cylindrical wall positioned between said upper wall and lower wall and centered about the center axis.

31. The gas-jet driven device according to Claim 29, said hub rotatably mounted to said upper and lower walls by bearings.

32. The gas-jet driven device according to Claim 31, said bearings having a fitment which causes said rotor to wobble when said rotor is driven.

33. The gas-jet driven according to Claim 29, further comprising a base stand for supporting said rotor above a floor.

34. The gas-jet driven device according to Claim 33, said base stand having a square footprint with four vertical sides.

35. The gas-jet driven device according to Claim 34, said base stand further comprising a pair of sidewall panels forming a partial enclosure around two contiguous sides said four vertical sides.

35. The gas-jet driven device according to Claim 35, wherein when said rotor is driven by the pressurized gas, the exhausted jet ricochets off from said pair of sidewall panels during each revolution inducing wobble into said rotor when said rotor spins about the center axis.

